

## ABSTRACT

The present invention provides an optical wavelength-division multiple access system and a  
5 corresponding optical network unit. A wavelength band Da (wavelengths  $\lambda_{d1}$  to  $\lambda_{dn}$ ) for downlink optical signals corresponding to the n ONUs, a wavelength band Ua (wavelengths  $\lambda_{u1}$  to  $\lambda_{un}$ ) for uplink optical signals corresponding to the n ONUs, a wavelength band Db  
10 (wavelengths  $\lambda_{dn+1}$  to  $\lambda_{dn+m}$ ) for downlink optical signals corresponding to the m ONUs, and a wavelength band Ub (wavelengths  $\lambda_{un+1}$  to  $\lambda_{un+m}$ ) for uplink optical signals corresponding to the m ONUs are set different from one another, the wavelength bands Ua and Ub are  
15 set adjacent to each other, and the wavelength bands Ua and Da or the wavelength bands Ub and Db are set adjacent to each other. Each of the ONUs has downlink optical signal receiving unit for receiving a downlink optical signal of one of the wavelengths  $\lambda_{d1}$  to  $\lambda_{dn+m}$   
20 in the wavelength bands Da and Db which wavelength is assigned to the ONU, and uplink optical signal receiving unit for receiving an uplink optical signal of one of the wavelengths  $\lambda_{u1}$  to  $\lambda_{un+m}$  in the wavelength bands Ua and Ub which wavelength is  
25 assigned to the ONU or an uplink optical signal within a broad band including the wavelength bands Ua and Ub.